



the RARA RAG

Published by
ROCHESTER AMATEUR RADIO ASSOCIATION, INC.

VOL.53

JANUARY 2001

NO. 5

Repeaters And The N2HJD Megaplex System

Peter Fournia, W2SKY

A tutorial on repeaters and the N2HJD repeater system is the topic of the January 5th meeting. The meeting will be in the first floor auditorium of the Monroe County Social Services building at 111 Westfall Rd. It starts at 8:00 PM. The topic will be presented by Bob Shewell, N2HJD. Bob has been developer and operator of the Megaplex system, the most extensive system of linked repeaters in and around Rochester.

Bob's N2HJD repeater system is all home brew at 10 sites, involving 6 ham bands, 14 controllers, 23 receivers, and 19 transmitters. There is full telemetry, with normal and reverse auto patch along with a link to NOAA weather. Most sites have emergency power because the system is affiliated with RACES and ARES. This network has evolved since May 1988, is privately owned and is also affiliated with the Rochester Radio Repeater Association (RRRA). About 45 "friends" support this system. Bob also services commercial repeaters in the area.

What better way to get updated on repeater operation than to get it from the guy who operates them, especially on this important local system? Bob will start with a general explanation of repeaters covering the basics including transmitter, receiver, controller, antennas, services and etiquette. He will be using the many pictures from his web site. You can get a good preview by going to the N2HJD web site. Beyond that he has some interesting stories about management, repair and operation of these repeaters. He also has interesting usage statistics related to local events.

Many local hams support our local repeaters by making annual donations. The grateful operators respond by giving codes to the donors that enable hams to access additional repeater services such as auto patches and linking. Find out how to use access the telephone, or get time, temperature, keypad verification and functions using your HT or mobile transceiver.

Come to the RARA meeting on January 5th, 8:00 PM, and get repeaterized.

RARA Celebrates 70th Anniversary 1931—2001

Ed Gable, K2MP

This year celebrates 70 years of the Rochester Amateur Radio Association. Briefly, the first club, the *Rochester Wireless Association*, was formed in April 1913. There were others operating simultaneously, such as the *St. Paul Radio Association*. The reason is that most hams of the time could not communicate across town! Greece to Brighton would be DX. The first club after WWI was the *Rochester Radio Club* of 1920, followed by the *Triangle Radio Club*. These two joined as the *Radio Club of Rochester* in 1921 and remained active until RARA was formed in 1931. Also in that time period was another club, *The Society of Rochester Transmitting Amateurs*, in 1927. In the 40's the *Rochester VHF Group* and *Rochester DX Association* were formed and are still going strong. Other groups, such as the *Rochester Mobile Club* and the *Rochester YL Club*, were not quite so long lived, Congratulations to RARA on 70 years.

RARA Meeting January 5, 2001

Social Services Building
111 Westfall Road

Repeaters And The N2HJD Megaplex System

Presented By
Bob Shewell, N2HJD

the RARA RAG

PUBLISHED BY
ROCHESTER AMATEUR RADIO ASSOCIATION, INC.
P.O. Box 93333, Rochester, NY 14692-8333
RARA Hotline 442-0587 Website: www.ggw.org/rara/

Editor.....Lloyd R. Caves, WB2EFU
652 Beverly Drive, Webster, NY 14580-2305 (716) 747-1225
Internet: wb2efu@frontiernet.net

Assistant Editor.....George Platteter, AA2FO
82 Colonnade Drive, Rochester, NY 14623 (716) 334-4488
Internet: aa2fo@pa.net

Editorial Assistant.....MaryKay Vesco, KC2DPG
310 East Commercial Street, E. Rochester 14445 (716) 381-7773

VOL. 53 JANUARY 2001 NO. 5

OFFICERS:

President: Keith Freeberg, N2BEL.....458-8246
Internet: kff@frontiernet.net
Vice-President: Peter Fournia, W2SKY.....377-0535
Internet: w2sky@ar1.net
Secretary: Howard J. Greenwald.....387-0280
Internet: hjgreenw@frontiernet.net
Treasurer: Richard Goslee, K2VCZ.....334-1762
Internet: rgoslee@rochester.rr.com

BOARD OF DIRECTORS:

MaryKay Vesco.....381-7773
Internet: kc2dpg@banet.net
Jaime Ananko, N3ZSS.....292-0032
Internet: jananko@aol.com
Edwin Holdsworth, N2EH.....624-1929
Internet: n2eh@frontiernet.net
Scott A. Blystone, K9EEE.....247-2820
Internet: k9eee@blystone.net
Jack Tripp, N2SNL.....381-7757
Internet: n2sni@ar1.net
Allen E. Skiles Sr, W2AES.....352-1087
Internet: w2aes@ar1.net
Thomas E. English.....381-4018
Internet: tenglish@frontiernet.net

Club Historian: Ed Gable, K2MP
Public Service Coordinator: Edwin Holdsworth, N2EH
License Testing Director: George Platteter, AA2FO
Membership Chairman: Alex Piccirilli, NV2Y
Hamfest General Chairman: Harold Smith, K2HC
K2JD Engraving: Edwin Holdsworth, N2EH
Public Relations: Keith Freeberg, N2BEL
License Class Director: Tim Magee, WB2KAO
Web Page Administrator: Peter Fournia, W2SKY
Club Station Trustee: Edwin Holdsworth, N2EH

The RARA RAG (USPS 605-440) is published monthly except July and August by the Rochester Amateur Radio Association, Inc., 24 Elaine Drive Rochester, NY 14623. Subscription is \$5.00 per year (included in the annual membership dues and may not be purchased separately). Periodicals postage paid in Rochester, NY.
POSTMASTER - Send address changes to The RARA RAG, P.O. Box 93333, Rochester, New York 14692-8333. Full permission is granted for reprinting articles provided a credit line is given to the RARA RAG. The RAG exchanges, with other organizations' publications.

RARA Now Has An E-Mail Reflector!

Scott Blystone, K9EEE

Rochester Amateur Radio Association now has an e-mail reflector. For those of you unfamiliar with the function of a reflector, it will redirect any e-mail message sent to the group as a whole to each member on the list. You can subscribe to this list in a number of ways:

1. Go to <http://www.egroups.com>, and set up an account for yourself. The group you want to subscribe to is "rara-general". E-Groups also hosts a number of other Amateur Radio groups you may want to investigate.
2. You may also send an e-mail to rara-general-subscribe@egroups.com. Do not put anything in the subject line of the message. The body of the message should contain only one line, which should read, "subscribe rara-general".
3. You may also send an e-mail to Scott Blystone, K9EEE at k9eee@blystone.net and I will subscribe you manually.

After you have subscribed to the group, you can post messages to the reflector by sending a message to rara-general@egroups.com. Please note that this is a "moderated" reflector. That is, all messages sent to this address will first come to the moderator (at this point in time, me) for approval before being posted to the group. I will quickly post all messages to the group except those that contain any foul or obscene remarks or any remarks derogatory to a single individual. Any such messages will be first returned to the sender for rework.

Should you chose to unsubscribe to the list an any point in the future, you may either do so through the aforementioned Web site, or by e-mailing rara-general-unsubscribe@egroups.com with "unsubscribe" as the first and only line of your message. I can also unsubscribe you manually, should you wish.

Please note that all information will be treated with the utmost confidentiality. You will not receive any unsolicited e-mail. One other note for those of you who may use an e-mail forwarding service (such as k9eee@ar1.net), which points to k9eee@blystone.net. If you subscribe with this sort of address, you will be unable to post messages to the reflector. You must either subscribe with your actual e-mail address or else go to the Web page mentioned earlier and set up your individual profile so that you can post to the group from other addresses.

Next RAG Deadline—January 12, 2001

RARA Memorial Scholarship

Richard Goslee, K2VCZ

The Rochester Amateur Radio Association, Inc. is pleased to announce that starting this year a scholarship will be awarded to a licensed member who will be attending college next school year. The scholarship fund was started by memorial donations remembering two of our members who passed away in recently. The donations were in memory of William Buchan, W2OMV and William Resch III, K4VOS. The award will be presented during the banquet at the Rochester Hamfest.

The applications will be available in February and a full description of the program will be in the next issue of the *RAG* (February).

RARA License Classes

Tim Magee, WB2KAO

By the time you read this article the fall semester of the RARA License classes will have concluded. I expect that we will have good success among the candidates that are remaining in each class. We will give you specific numbers in the next issue. I wish to thank my staff of instructors for a job well done.

The Spring 2001 semester of License Classes will commence with registration on Monday, Feb. 12, 2001 and continue through the testing session on May 14, 2001. We will be running Technician, General and Extra theory classes. Five WPM CW and Extra theory will be taught from 7 to 8 PM. Technician and General theory will be taught from 8 to 9 PM. Further details appear on the RARA web page at <http://www.ggw.org/rara>, or you may contact Tim Magee, WB2KAO at wb2kao@yahoo.com.

SKYWARN Training

February 10, 2001

Social Services Building
111 Westfall Road

9:00 AM Till 12 Noon

This Training Is Open To Anyone
Having An Interest

RARA RAG 20 Years Ago, January 1981

Ed Gable, K2MP

VP and Program Chairman Don Drennan, W2EBF, announced the program topic would cover how to build your own PC Boards. Presenters are Bob Carlson, KA2BNL, and Mike Borton, KA2AFE, both from *Rochester Instrument Systems* of Rochester. The venue is the Statesman's Club, 19th floor of the First Federal Savings building at the intersection of State and Main Streets. RARA membership stood at 684, including 117 new members. The renewal rate at that time was 68%. "Beat The Pack Rats" was the cry of H. Munday, KD2K, writing for the Rochester VHF Group and their annual fray into the January ARRL VHF Sweepstakes contest. The club is eager to recruit the many area 2-meter FM users as participants. An unusual announcement saw Rick Berg, WA2RLQ, writing for the RDXA, telling that there would not be a meeting for January. No reason was given but Rick went on to say that the club was healthy, had 34 members, and was becoming more active after almost no DX activity in the seventies. Dwight Hill, K2KWK, wrote describing the RARA 50 Years Anniversary Contest. This was a Work All States contest in various categories of modes and was open to RARA and Atlantic Division members. Ed Holdsworth, N2EH, Licensing Course Director, reported that the General Class radio course would start in February with Ed Gable, K2MP, as instructor. A long-term local advertiser was the Heathkit Electronic Center on Jefferson road, this month featuring a \$1.50 off the price of a new ARRL Handbook. From the want ads you could buy a Heath DX-60B and HG-10 VFO for \$125.00 from Paul Alpeter, N2BUL.

RARA Family Picnic
June, 2001

Watch For More Details

AUTO ACCIDENTS
WILLS and ESTATES
REAL ESTATE
SOCIAL SECURITY
DISABILITY

Sherwood Snyder

Attorney At Law

546-7258 • 183 E. Main St.
W2KFU Suite #1024

RARA RAG 3

Rochester VHF Group

Mark Hoffman, K2AXX

It's that time of year again. The ARRL January VHF Sweepstakes is just around the corner! AND, as always – there are rules to follow and updates to embrace – this year is no different. There are some important things in this article – please take the time to check it all out. Also look at our web page, <http://vhfgroup.rochesterny.org> and click on CONTESTING.

The contest is **January 20-22, 2001, from 1900 UTC Saturday til 0300 UTC Sunday**. There are no time limits in this event. The object is to work as many amateur stations in as many different grid squares as possible using authorized frequencies above 50 MHz.

The ARRL has changed some classes of entry; here are some of the changes:

- 1) **Single Op, Low Power** - Under 200w PEP on 6/2, under 100w PEP on 222/432 and under 10w PEP on 903 and up.
- 2) **Single Op, High Power** – Anything greater than listed above on any band. If you run 150w on 432 and 20w on 1296 for example, you must enter as Single Op High Power.
- 3) **Single Op, Portable** (Used to be QRP Portable) – Must be 10w PEP or less, portable power source and equipment, and portable antennas. Single Op, Portable entrants **MUST OPERATE** from a location other than a permanent station location. In other words, you can't run your home station off batteries for the weekend.

In addition, if you are using logging software, it **MUST** provide the output in the new CABRILLO format. Check with your software manufacturer to see if it will format the files properly. The ARRL website has all his information available, at <http://www.arrl.org/contests>. For example, CT versions 9.50 and up WILL produce Cabrillo, VHFTEST v5.3 does NOT. Many software companies are publishing updates frequently, so it would be wise to ask the maker for the appropriate fixes as needed. Best to do this NOW, since it affects all future contests – both CQ and ARRL sponsored!

The Rochester Cup award program will be contested once again this year. However – unlike past years, there has been a significant change in HOW it will be won. Let me explain:

In past years, the Cup winner has been determined by various point methods – most RVHFG members worked per club, and so forth. This year, we've tried simplifying things. The sum of all log points submitted per club determines the club aggregate score.

The highest score wins. Let me show you what I mean:

RARA submits 2 logs	RDXA submits 2 logs	BARK submits 2 logs
K2JD-25000 points	W2RDX-5000 points	K2BRK-25000 points
WB2EFU 10000 points	K2AXX 23000 points	WB2VUO 22000 points
Total: 35000 Points	Total: 28000 Points	Total: 47000 Points

In this case, BARK would be the winner of the Rochester Cup award. The more logs a club submits, the higher the aggregate score will be. Therefore, make CERTAIN you rally your troops ahead of time. If you get on the air and only work 5 stations – SUBMIT A LOG. Those points can make the difference.

If you are not an RVHFG member, your log will not count towards RVHFG club awards or the RVHFG Club Competition - only for your Rochester Cup club.

To send your log to the RVHFG Contest committee, you have 2 ways to do it:

- 1) If via paper, send a COPY OF YOUR LOG (not the original – that must be sent to the ARRL yourself) to the RVHFG, PO Box 92122, Rochester NY 14692.
- 2) Via email, send your electronic submission (the same files you sent to the ARRL) to January@vhfgroup.rochesterny.org.

We CANNOT SEND YOUR LOGS TO THE ARRL ON YOUR BEHALF. In order for your scores to be counted, you **MUST** send the original log to the ARRL yourself, and only send us a copy. The ARRL will no longer accept batches of logs as we traditionally do. Therefore, it is wholly dependent on YOU to file your logs with the league.

If you have ANY questions regarding logging, contesting or other topics – PLEASE feel free to contact the RVHFG Contest Chairman Jim Howard, N2JMH (n2jmh@arrl.net) or RVHFG Chairman Mark Hoffman, K2AXX (k2axx@arrl.net).

OR – we'll be explaining all this at the **January RVHFG Meeting**, held January 12th at 7:30 PM. As always, our meetings are at 111 Westfall Road, the Monroe County Social Services building. Look forward to seeing you AND working you in the contest. GOOD LUCK!

NEXT RAG DEADLINE
January 12, 2001

AWA Planning Made in Rochester Display

Ed Gable K2MP, Museum Curator

The Antique Wireless Association's Electronic Communication Museum, in Bloomfield, NY, is planning new displays for 2001. One of those will be an interesting display of communication equipment all made in the Rochester area. Headphones from Springwater, transformers from Honeoye Falls, crystal sets made by a Rochester Optical company, and converters from Hilton are all early display candidates. We need your help. Although our list is extensive, we're probably missing some manufacturers. The museum theme is electronic communication, that's telegraph, cable, wireless, radio, TV through modern satellite and Cell phones/pagers. Please contact the museum Curator if you have any information, contacts, and sources of artifacts or documentation to loan or donate. Call, write or e-mail Ed Gable, K2MP, at 187 Lighthouse Rd, Hilton, NY 14468, (716) 392-3088, k2mp@eznet.net.

The museum also has openings for Museum guides for the 2001 season. Volunteers can do as little as four fun filled hours a year and make a huge difference. You will always work with an experienced guide and free training is provided. Try it, you won't like it, you'll love it.

RARA Amateur Radio License Testing

All Elements Needed To Complete a License Class

Saturday January 20, 2001

Registration - 8:30AM
Testing - 9:00AM

Social Services Building
111 Westfall Rd., Rochester

Inquires (716) 334-4488
aa2fo@rpa.net

DX/Contesting Report

Ed Gable, K2MP

This is the peak of the contest season with each weekend providing as much activity as you can handle. What most people consider as *THE* contest for DX'ers, the CQWW CW weekend, was a good week with good conditions and enough exciting DX and deep enough pileups to keep the interest high. Following that was the 160-meter contest with less than ideal conditions making even West Coast QSO's difficult to log. Finally, the weekend of December 9/10 saw the popular 10-meter contest. This interesting event allows both SSB and CW on the same weekend. Conditions were a bit disappointing with the band closing early and opening late, but none-the-less there were several RDXA members with good scores for their personal and Club scoring efforts.

As I write this VKØMM is on a boat heading home from a years stay at a research station on Macquarie Island. VKØMM, also operating as VKØLD, made headlines by issuing VKØLD QSL cards via e-mail. So far the ARRL is not accepting such cards and I think Alan did so to press the issue.

Remember to update to the new postal rates. QSL cards are 20 cents to US; DX letters are 80 cents, but increase to a full ounce over the previous one-half ounce for DX letters. IRC's, as of 1/7/01, will exchange for 80 cents worth of local postage.

The big DXpedition for the month is a multi-national group activating Comoros as D68C. This will be a huge effort with 28 operators and will operate the ARRL CW DX contest as well on Feb 17-18.

January contests include: ARRL RTTY, CQ 160 meter CW and the ARRL January VHF contest. Please support the Rochester VHF Group in this one.

The next meeting of the RDXA is January 16th, 7:30 PM at the usual 111 Westfall Road site. Visit the RDXA Web site at www.qsl.net/rdxa.

RARA HOTLINE
(716) 442-0587
24 HOURS A DAY

LIFE, ACCIDENT & HEALTH AGENT

MARYKAY VESCO

KC2DPG

310 Commercial Street
East Rochester, NY 14445
716 381-7773 Fax/Phone



P&C BROKER

NOTARY PUBLIC

RARA RAG 5

Kodak Amateur Clubs Become One

Charles Escriva, KB2SOZ
George Masny, KA2GPJ

The one announcement that we all forgot to make at last month's meeting was the fact that the Kodak Park Amateur Radio Club has invited the Kodak Apparatus Division Radio Club (our official names) to join them, and become one club. No more us and them, no more two separate mailing lists - each club used to boast near 100 members - with one big happy family we hope to re-ignite the spark and grow together toward a common goal—promoting amateur radio in the community, and at Kodak.

The first Thursday of every month we host a VE testing session. It is a walk-in session, with no advance registration necessary. It is held from 5:30 PM until 7 PM at the Theatre on the Ridge, Bldg. 28. You may contact Mike Eeckhout, NO2Z, for more information.

If computers or packet radio is your interest, you already know about Kpark, station WB2WXQ. Our node is a key part of the over the air network that covers the state. We also support, along with RAPS, a digipeater - KB2WAY.

The club repeater has also relocated to Kodak Park. Come join us on 444.750, with 110.9pl. You may be impressed by the coverage available either handheld or mobile. This repeater is open to all amateurs.

The club also is involved in community service. On the first Friday in September, the club supports the other Recreation clubs, Ultimate Goal, and ES&L by helping with the Fall Classic 5K Run/Walk. Come spend some time helping with the communications for this event, keeping runners safe. The past few years, the American Diabetes Association benefited from the proceeds. For 2001, it will be held at Seneca Park. Also, some members work with the Radio Coaches program, helping teach science in sixth grade. We also hope to have the phone line restored to the repeater, which will enable hams to access 911.

We would be happy to have you join us. We'd even be glad to include you on our mailing list. For more information feel free to contact Dave Reusow, KC2DQN, George Masny, KA2GPJ or Charlie Escriva, KB2SOZ.

Rochester Hamfest
June 1, 2, And 3
2001

RARA RAG 6

Comments And Concerns

To RARA Officers, Board Members and Committee Chairs:

When Lloyd Caves, WB2EFU, Rag Editor brought me the labels and envelopes for the December RAG mailing, I asked why there was a decline in numbers from 621 previously applied to 491 for the current mailing. I was informed the Board had issued a directive three or more years ago ordering the RAG editor not to mail to those who had not yet renewed their membership.

The Board does not have that power, short of amending the Association By-Laws.

Article I Section F of the RARA By-Laws adopted in 1969 states: Term—Membership extends from November 1st of each year to October 31st of the following year.

Section G states: Delinquents—Those whose dues remain in arrears after December 31st will be declared delinquent and ineligible to participate in corporation activities.

The language means that any member who's dues are in arrears may participate in all corporation activities until December 31st. One of the corporation activities is receiving a copy of the club bulletin. If the January edition of that bulletin is mailed in the month of December, members in arrears must receive a copy.

A bit of history here. The Rochester Amateur Radio Association is operating under a Certificate of Incorporation dated April 14, 1960 and a Certificate of Extension of Corporate Purposes dated March 7, 1969. Along with that Extension, the organization By-Laws was adopted.

The Officers and sitting Board along with club attorney Jack Fulreader, W2AWN, carefully crafted the Extension Certificate and By-Laws in 1969. The purpose of creating the Extension Certificate and updated By-Laws was to insure that we would maintain our hard won Internal Revenue Service 501(c)3 Not for Profit status with federal and New York State authorities.

The words in those documents were written so an "outsider" could understand what we were saying. An example: we have a convention committee, not a Hamfest committee. Bureaucrats understand a convention. Most have never heard of a Hamfest.

In By-Laws, Article XII - Fiscal Year states: The fiscal year of the corporation shall run from September 1st of each year to August 31st of the following year.

The member terms and fiscal dates were put in place after long and careful discussions.

Because our club operates meetings from September to June, the August 31st—September 1st fiscal dates allowed us to open a club season in September with "clean" books.

The member dates were chosen for the following reasons. The September edition of the *RAG* always contained a member renewal form. That gave each member the opportunity to renew in person at the September meeting. If a member was unable to attend the September meeting, there was another opportunity to renew at the October meeting.

It is very possible that a member may have been unable to attend either meeting. The November and December *RAG* would always contain dues reminder notices. It was felt that the additional 60 days was sufficient and would continue a member in good standing until the end of that calendar year.

These discussions should appear in the Board minutes of the 1969 time frame.

Our Incorporation and By-Laws documents may be amended at any time. The careful crafting was done so amendments would be unnecessary. Whenever a new filing is submitted, there is an opportunity for bureaucrats to review our Not for Profit status. We worked long and hard to achieve that status. It would be a shame and costly for us to lose the status.

I recommend we continue with the current documents without additional amendments. Those documents have served us well for over 30 years.

Harold Smith, K2HC – RARA offices held: President, Vice President, Secretary, Board Member (more than 20 years), *RAG* Editor (more than 20 years), and Hamfest General Chairman (since 1963).

Alex Piccirilli, NV2Y—Thanks for including me in on your comments on "Member term." As Membership Chairman I questioned the decision on the basis of limiting the exposure of the club with the possibility of reducing membership. I was not aware of the points you outlined. I hope this will shake up the Board members. I can understand their concern to reduce costs but at what expense.

Hugh Turnbull, W3ABC—The following is in reference to the letters in this column in the November issue:

Hello Harold,

The letter received from the Concerned Amateur and your reply is well on the way to enjoy a life all its own on the Internet, bulletin boards, and in club newsletters.

Having attended every Rochester Hamfest from 1980 thru 2000, I witnessed the problems that you encountered on the "Pathway of Time".

With those events there was something else happening. The number of licensed amateurs increased so that today, the number is now about 700,000. They were, however, a different type of amateur. Only about 20 percent belong to the ARRL compared with 30+% some 5 years ago and, sad to say, they do not appear to be assimilated into the mainstream.

My math isn't all that fuzzy. More hams who are League members and part of the mainstream might make a significant difference in the WNY Hamfest attendance. Rhetoric won't hack it. Some hard work will

Alex Piccirilli, NV2Y—I have been meaning to call you up on the phone. As a matter of fact it was on my list of things to do tomorrow. At the last Board meeting I stated that I thought that the rebuttal to the question as asked in the last months *RAG* (November issue) was long overdue. I would recommend that it appears every year. Over the years I have heard some very disparaging remarks. I hope your statement settles that issue. I thought it was GREAT. It bothers me greatly to hear the uninformed making statements about how the Hamfest is run. Thanks again for writing that informing rebuttal.

Do Not Forget

Change In RARA's
Meeting Location

Month Of
January Only
Social Services
Building

111 Westfall Road

RARA License Class

February 12, 2001

Social Services Building
111 Westfall Road

Do You Have A Family Member,
Friend, Or Neighbor
That Would Like To Become A Ham?

If So,
Tell Them About RARA's License Classes
Or Get Them In Contact With
Tim Magee, WB2KAO

This Space Could Be For You
Join The *RARA RAG*
Advertisers
Improve Your
Exposure And Profits
Call (716) 671-7079

GLENWOOD

594 HAGUE STREET
ROCHESTER, NY 14606

HOURS:

M-F 9:00 AM - 5:00 PM

PH: (716) 328-1600

FAX: (716) 328-3630

ELECTRONIC COMPONENT PARTS

(NEW AND NEW SURPLUS)

- LARGE SELECTION
- HIGH QUALITY
- LOW PRICES
- IN-DEPTH INVENTORY

WE STOCK THE FOLLOWING:

AC CORDS	IC'S	SOLDER
CAPACITORS	LAMPS	SWITCHES
COAX CABLE	LED'S	TRANSISTORS
CONNECTORS	MOTORS	TRIACS
DIODES	POTENTIOMETERS	TRIMPOTS
ENCLOSURES	RELAYS	VARIABLE CAPS
FANS	RESISTORS	WIRE/CABLE
FUSES	SCR'S	ZENER DIODES
FUSEHOLDERS	SHRINK TUBE	LOTS MORE

TRY GLENWOOD FOR ALL YOUR COMPONENT REQUIREMENTS

FULL LINE DISTRIBUTORS FOR

NTE
PRB
GC/THORSEN
SL WABER
WAHL

Replacement Semi's
VCR Belts & Accy
Tools & Chemicals
Outlet Strips +
Soldering/Drilling
Tools & Accy

TYTON
PROTEK
MUELLER
GOLDSTAR
PALADIN

Cable Ties
Test Gear
Test Leads
Test Gear
Tools